

Notes of Lecture, Harvard, Nov. 18, 1960

Time Required - 90 minutes

The following slides were used.

MM	Glass	Guarda
49	mounted	<u>Aa</u> eradication indices São Luis and Maranhão
21	unmounted	Vale Canaan, 1932
xx	mounted color	YF in Southern Brazil 1934- 1940
53	mounted	<u>Aa</u> Paraguay DDT
43	mounted	<u>Aa</u> eradication Brazil 1943-52 influence of DDT
xxx	mounted color	<u>Aa</u> in Americas 1957
	unmounted	Jungle at Tocumen
xl	mounted	JYF Cent. Am. 1948-57
	unmounted	Tree Ferns
	unmounted	Colorado Indians
	unmounted	Jungle YF and Plague, Caracas
71	mounted	YF in Americas 1946-53
137	mounted	YF in Americas, 1954-56

Yellow Fever Problem

A. Tropical Public Health

B. International Health

Reality of Problem

Present { America - Man - Monkeys  
 Africa - Man - Primates  
 Asia Potential - Man - Monkeys  
 Temperate Zones - Seasonal Man.

Most difficult problem for International Quarantine Committee

Most fearsome disease

Most emotional reaction

Most severe restrictions on travel to Asia

Yellow Fever

Zoonosis -

Man and Other Primates

Virus - Acute Infection

Death or Immunity

No Carrier State

Transmission

Aa - urban maritime

Haemogogus - Aedes - Sabeites

Aedes africanus, Aedes simpsoni

No Trans-Ovarian persistence

Continued Existence of Virus

Requires series of acute mamalian

infections - not further spaced

than life time of infected mosquito

Clinically - short incubation -

rapid onset -

- A. infection
- B. lull
- C. intoxication
  - albuminuria
  - hemorrhage
  - anuria

Diagnosis

- A. Time schedule
  - albuminuria
- B. Isolation virus
- C. Repeated neutralization

Pathology - Liver

Immunology - complement fixation

neutralization - 2B Viruses

haemagglutination

Immunization -

1. Natural - maternal antibodies + early infection
2. Vaccination
  - a. killed virus
  - b. virus plus serum
  - c. cultured virus plus serum
  - d. Fch neurotropic virus
  - e. 17D

Duration of immunity!

(Comment on Polio Vaccination - YF vaccine

viruses are neutropic - Fch. kills 100% mice

and 100% + monkeys - Fch gives 60% viremia

17D gives 5% viremia)

Today's lecture on YF is in the course on  
Ecology and Epidemiology of Infectious Diseases  
in Department of Microbiology and Tropical  
Public Health.

#### Tropical Public Health

Tropical Medicine - successes always in pre-  
ventive medicine -

YF in 1900 - YF only after Columbus

RF in 1913 - Rose to Asia

1915 - Gorgas studied a decade and a  
half of results.

R.F. embarked on Eradication of YF based on  
reduction of Aa in key centers of infection  
Spontaneous Disappearance

#### Early victories

Ecuador, Peru, Central America, Mexico

#### Failures

	Brazil - 1919-20 Federal Comissão
	R.F. - 1923-26
Brazil	R.F. - 1926-28
	Rio outbreak - 1928-29
	Recife cases in control area 1929
	Colombia - Socorro 1929
	Venezuela - Guasapati 1929
	Bolivia - Sta Cruz 1932

Personal experience on becoming responsible  
for YF in North Brazil.

Belém to Macéio

Reorganization - Manual - Maps

FA 52 - Detailed Records

Larvicide to all foci

Adult captures	Threshold of Visibility
Viscerotomy	YF = <u>Aa</u>

Results =

a. unrecognized Aa breeding - Local  
eradication in several cities.

2 slides - Light.

b. unrecognized endemic Aa transmitted

YF in rural areas of NE Brazil - attack on  
Aa in rural areas ended endemic in Aug, 1934

2 slidesC. unrecognized jungle yf very widespread  
lights

in many areas where yf had never been recorded

Became clear that Socorro, Guasapati and Santa

Cruz were secondary to Jungle yf

YF virus not eradicable - program changed to

eradicate Aa - give story of expansion

to 1960 - DDT helped

3 slides lights

Jungle YF - clinically identical

Depends on animal infections and on  
forest mosquitoes

(Wave phenomenon in Aa and Jungle Fever)

America	{	Man is incidental, often dead-end infection unless <u>Aa</u> is present in domicile - Transmission by day time biting mosquitoes
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Africa	{	Man not so frequently infected in forest - vector is night biting <u>A. africanus</u> - monkey brings virus to <u>Aedes simpsoni</u> which transmits man to man.
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Protection against jungle yf requires individual vaccination -

Endemic Aa, yf travels with man along human routes of travel

Jungle yf travels through forests.

Recent yf history

Under - reporting Africa, Americas

Africa - virus widespread, but few recognized cases

Panama - Mexico - 2 slides

Pacific Coast - Ecuador 2 slides

Trinidad - Caracas 1954 1 slide

YF 1946 - 1956 2 slides

Eradication of Aa led to eradication of Ag  
Brazil - Egypt

## Rehabilitation of Eradication Concept

Eradiation must expand -

International cooperation Essential

WHO, PAHO, UNICEF, TCA

But, complete coverage in individual countries  
needed - USA not entirely ready.

small pox, tuberculosis, leprosy, typhoid,  
yaws, syphilis

Local general unit vs Unilateral Campaigns